

Claims

1. An isolated TMOF receptor.
2. The isolated TMOF receptor, according to claim 1, wherein said receptor is from an insect.
3. The isolated TMOF receptor, according to claim 2, wherein said receptor is from a mosquito.
4. The isolated receptor, according to claim 1, wherein said receptor comprises the amino acid sequence shown in SEQ ID NO. 2.
5. An isolated polynucleotide encoding a TMOF receptor.
6. The isolated polynucleotide, according to claim 5, wherein said TMOF receptor is from an insect.
7. The isolated polynucleotide, according to claim 6, wherein said insect is a mosquito.
8. The isolated polynucleotide, according to claim 5, wherein said polynucleotide encodes a TMOF receptor which comprises the amino acid sequence shown in SEQ ID NO 2.
9. The isolated polynucleotide, according to claim 5, wherein said polynucleotide comprises the sequence shown in SEQ ID NO. 1.
10. The isolated polynucleotide, according to claim 5, wherein said polynucleotide hybridizes with the complement of SEQ ID NO. 2.
11. The isolated polynucleotide, according to claim 5, wherein said polynucleotide is optimized for expression in plants.

12. A compound which binds to a TMOF receptor, wherein said compound is not TMOF.

13. The compound, according to claim 12, wherein said receptor is from an insect.

14. The compound, according to claim 12, wherein said insect is a mosquito.

15. The compound, according to claim 12, wherein said receptor comprises the amino acid sequence shown in SEQ ID NO. 2.

16. The compound, according to claim 12, which is pesticidal.

17. The compound, according to claim 16, wherein said pest is an arthropod, a platyhelminth, or a nematode.

18. The compound, according to claim 17, wherein said pest is an insect.

19. The compound, according to claim 12, wherein said pest is selected from the group consisting of coleopterans, lepidopterans, and dipterans.

20. The compound, according to claim 19, wherein said pest is a mosquito.

21. A method for controlling a pest which comprises administering to said pest an effective amount of a compound which binds to a TMOF receptor, wherein said compound is not TMOF.

22. The method, according to claim 21, wherein said insect is selected from the group consisting of coleopterans, lepidopterans, and dipterans.

23. The method, according to claim 22, wherein said insect is a mosquito.

24. The method, according to claim 21, wherein said receptor comprises the amino acid sequence shown in SEQ ID NO 2.

25. A method for identifying an insecticidal compound wherein said method comprises determining if said compound binds to a TMOF receptor.

26. The method, according to claim 25, wherein said receptor is expressed at the surface of a cell.

27. The method, according to claim 25, wherein said TMOF receptor is from an insect.

28. The method, according to claim 27, wherein said insect is a mosquito.

29. The method, according to claim 25, wherein said receptor comprises SEQ ID NO. 2.

30. A method of screening trypsin synthesis-inhibiting compounds comprising exposing a compound in a competitive binding assay to a TMOF-receptor encoded by a nucleotide sequence comprising SEQ ID NO. 1.

31. The method, according to claim 30, wherein said TMOF-receptor is produced by a recombinant host transformed with said nucleotide sequence, and wherein said compound is exposed to said recombinant host.

32. The method, according to claim 31, wherein said recombinant host is a cell, and wherein said nucleotide sequence is expressed at the cell surface.

33. The method, according to claim 31, wherein said recombinant host is a cell, and wherein said TMOF receptor is secreted from the cell.

34. A DNA probe encoding an amino acid sequence shown in SEQ ID NO. 2, said probe having at least ten nucleotide residues.

35. An RNA molecule comprising a nucleotide sequence which is complimentary to a DNA sequence shown in SEQ ID NO. 1, wherein said RNA molecule comprises at least 10 nucleotide residues.

36. An RNA molecule comprising a nucleotide sequence which is complimentary to a DNA sequence encoding an amino sequence shown in SEQ ID NO. 2, wherein said RNA molecule comprises at least 10 nucleotide residues.

37. A recombinant host transformed with a polynucleotide encoding a polypeptide exhibiting TMOF receptor.

38. The recombinant host, according to claim 37, wherein said polypeptide comprises the amino acid sequence shown in SEQ ID NO. 2.

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